Residual Alkalinity Nomograph

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Change in base malt mash pH due to RA.
(measured at room temperature)

Approximate
Mash pH change
due to RA

Residual Alkalinity
in Brewing Water
as CaCO₃ ppm

Total Alkalinity
as CaCO₃ ppm

[Sq ppm

0 10 20 30 40 50 60 70 80

[HCO₃] ppm

Effective Hardness
Note: This is not the same as
Total Hardness as CaCO₃.

[Ca] ppm

0 10 20 30 40 50 100 150 200 250

To Use:
1. Draw a line between the Calcium and Magnesium concentrations to determine the Effective Hardness of your water.
2. Draw a line from the Effective Hardness value through the Total Alkalinity of your water to determine the Residual Alkalinity. The approximate effect of the residual alkalinity on the mash pH is shown above.
3. The beer color scale is a suggestion to help you choose a beer style with enough specialty malt acidity to balance the indicated amount of residual alkalinity in the brewing water in order to achieve a mash pH in the preferred range.
4. The preferred range of mash pH, for all styles, regardless of color, is 5.2 to 5.6 as measured at room temperature.